

ABSTRACT OF THE INVENTION

45 An improved pin housing sub-assembly configured for reliable assembly and
stability as an intermediate sub-assembly. The length of the plunger return spring is
greater than the diameter of the spring well in the pin housing, such that the spring
cannot be accidentally installed sideways in the well. During assembly, the non-
compressed longer spring places the pushrod seat flush with the end of the pin
50 housing. A shallow annular groove is provided in the inner wall of the pin housing near
the outer end thereof, and an expansion ring may be installed therein when the plunger
return spring is slightly compressed. The expansion ring holds the sub-assembly
together as an intermediate but is displaced by the spring tower in a subsequent
assembly step to become the locking ring between the pin housing and the spring
55 tower, as in the prior art.